**In the Specification:**

Please amend the specification as shown:

Please delete page 44, and replace it with the following page:

**Cloning, expression and purification of recombinant *P. gingivalis* genes.**

**PG1**

Oligonucleotides to the 5' and 3' regions of the deduced protein were used to amplify the gene of interest from a preparation of *P. gingivalis* W50 genomic DNA using the TaqPlus Precision PCR System ( Stratagene) and a PTC-100 (MJ Research) thermal cycler or similar device. The 5' oligonucleotide primer sequence was GCGCCATATGCTGGCCGAACCGGCC, **(SEQ ID NO: 533)** the 3' oligonucleotide primer sequence was GCGCCTCGAGTCAATTCATTTCCTTATAGAG **(SEQ ID NO: 534)**. The PCR fragment was purified, digested with Nde I, Xho I restriction enzymes (Promega) and ligated into the corresponding sites of the plasmid pProEx-1 (Gibco-BRL) and transformed into *E. coli* ER1793 cells (a gift from Elizabeth Raleigh, New England Biolabs). A resulting clone expressing the correct insert was selected and induced with or without 0.1mM IPTG (Promega) for expression of the recombinant protein. Expression of the recombinant protein was determined by SDS-PAGE analysis and Western Blot using the one of the rabbit antisera described above or an anti-hexahistidine antibody (Clontech) that detects the hexahistidine tag that was fused to *the P. gingivalis* recombinant protein. PG1 was purified by disruption of the *E. coli* cells by sonication in binding buffer (Novagen) and solubilisation by the addition of sarkosyl (N-Lauroyl sarcosine) to a 1% final concentration. There after the preparation was diluted to 0.1% sarkosyl in binding buffer, bound to a Nickel-nitrilotriacetic acid column (Ni-NTA; Qiagen), after washing bound proteins were eluted with 1M imidazole in elution buffer (Novagen) according to the Qiagen recommendations with 0.1% sarkosyl added to all buffers. Following purification samples were dialysed against 500mM NaCl, 20mM Tris, 0.1% sarkosyl at pH7.4 to remove the imidazole, concentrated as required and stored at 4°C until used. Purity and antigenicity were assessed by SDS-PAGE and Western blot using selected antisera (from those described above) and the protein concentration was determined by the BCA assay (Pierce).

Please delete the paragraph on page 45, lines 1-13, and replace it with the following paragraph:

**PG2**

The methods used for PG2 were essentially the same as for PG1 with the following exceptions. The 5' oligonucleotide primer sequence was CGCGGTATACATGAAAAGAATGACGC, **(SEQ ID NO: 535)** the 3' oligonucleotide primer sequence was CGCGAGATCTGAAAGACAACTGAATACC **(SEQ ID NO: 536)** and the PCR product was cloned into pGex-stop RBS(IV) (Patent application WO9619496, JC Cox, SE Edwards, I Frazer and EA Webb. Variants of human papilloma virus antigens) using the BstZ 171 and Bgl II restriction sites. 2% sarkosyl was used to solubilise PG2 and 8M urea was added to the solublisation buffer and to all other buffers. Urea was removed from the purified protein by sequential dialysis (4M then 2M then 1M then 0.5M then 0M urea all in 50mM Tris, 500mM NaCl, 0.1% sarkosyl, pH7.4). Purified protein was stored at 4°C until required.

Please delete the paragraph on page 45, lines 15-36, and replace it with the following paragraph:

**PG3**

The methods used for PG3 were essentially the same as for PG1 with the following exceptions. The 5' oligonucleotide primer sequence was GCGCGTATACATGAAGAAATCAAGTGTAG, **(SEQ ID NO: 537)** the 3' oligonucleotide primer sequence was GCGCAGATCTCTTCAGCGTACCTTGCTGTG **(SEQ ID NO: 538)** and DNA was amplified with Pfu DNA polymerase (Stratagene). The PCR product was cloned directly into pCR-Blunt and transformed into *E. coli* Top10F'(InVitrogen) before subcloning into the expression plasmid pGex-stop RBS(IV) using the Bst Z171 and Bgl II restriction sites and transformed into *E. coli* BL21DE3 (Pharmacia Biotech). The following modifications were made to the purification of PG3 from the PG1 method. Cells expressing the recombinant protein were disrupted by sonication in binding buffer and the insoluble inclusion bodies concentrated by centrifugation. Inclusion bodies were then solubilised in 6M urea (Sigma) in binding buffer and eluted with 6M urea added to the elution buffer. In some instances 6M guanidine hydrochloride (Sigma) was used instead of urea for these steps. Urea (or guanidine hydrochloride when it was substituted) was removed from the purified protein by sequential dialysis against reducing levels of urea (3M then 1.5M then 0.5M then 0M urea all in 50mM Tris, 500mM NaCl, 8% glycerol, pH7.4). Purified protein was stored frozen at -80°C until required. Protein concentration was determined by the Coomassie Plus protein assay (Pierce).

Please delete the paragraph on page 46, lines 1-8, and replace it with the following paragraph:

**PG4**

The methods used for PG4 were essentially the same as for PG3 with the following exceptions. The 5' oligonucleotide primer sequence was CTTCTGTATACTTACAGCGGACATCATAAAATC, **(SEQ ID NO: 539)** the 3' oligonucleotide primer sequence was TTCCAGGAGGGTACCACGCAACTCTTCTTCGAT **(SEQ ID NO: 540)** and DNA was amplified with the Tth XL PCR kit (Perkin Elmer). The PCR product was cloned into the expression plasmid pGex-stop RBS(IV) using the Bst Z171 and Kpn I restriction sites and transformed into *E. coli* ER1793.

Please delete the paragraph on page 46, lines 10-19, and replace it with the following paragraph:

**PG5**

The methods used for PG5 were essentially the same as for PG3 with the following exceptions. The 5' oligonucleotide primer sequence was TTGCAACATATGATCAGAACGATACTTTCA, **(SEQ ID NO: 541)** the 3' oligonucleotide primer sequence was AGCAATCTCGAGCGGTTCATGAGCCAAAGC **(SEQ ID NO: 542)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24 (Novagen) using the Nde I and Xho I restriction sites and transformed into *E. coli* BL21 (Pharmacia Biotech). Removal of urea was not proceeded past 1M urea as the protein was insoluble at lower concentrations of urea. Purified protein was stored at 4°C until required.

Please delete the paragraph on page 46, lines 21-28, and replace it with the following paragraph:

**PG6**

The methods used for PG6 were essentially the same as for PG3 with the following exceptions. The 5' oligonucleotide primer sequence was TAAACATATGTGCCTCGAACCCATAATTGCTCCG, **(SEQ ID NO: 543)** the 3' oligonucleotide primer sequence was CGTCCGCGGAAGCTTTGATCGGCCATTGCTACT **(SEQ ID NO: 544)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Nde I and Hind III restriction sites and transformed into *E. coli* BL21.

Please delete the paragraph on page 46, line 30, to page 47, line 2, and replace it with the following paragraph:

**PG8**

The methods used for PG8 were essentially the same as for PG3 with the following exceptions. The 5' oligonucleotide primer sequence was CGCGGTATACATGGAGTTCAAGATTGTG, **(SEQ ID NO: 545)** the 3' oligonucleotide primer sequence was CGCGAGATCTGTTTTCTGAAAGCTTTTC **(SEQ ID NO: 546)** and DNA was amplified with the TaqPlus Precision PCR System. The PCR product was cloned into the expression plasmid pProEx-1 using the Nde I and Xho I restriction sites and transformed into *E. coli* ER1793.

Please delete the paragraph on page 47, lines 4-14, and replace it with the following paragraph:

**PG8A**

PG8A is a shortened version of PG8 and has the first 173 amino acids removed. The methods used for PG8A were essentially the same as for PG3 with the following exceptions. The 5' oligonucleotide primer sequence was CGCGGTATACATGGAAAACTTAAAGAAC, **(SEQ ID NO: 547)** the 3' oligonucleotide primer sequence was CGCGAGATCTGTTTTCTGAAAGCTTTTC **(SEQ ID NO: 548)** and DNA was amplified with the TaqPlus Precision PCR System. The PCR product was cloned into the expression plasmid pGex-stop RBS(IV) using the Bst Z171 and Bgl II restriction sites and transformed into *E. coli* ER1793. Prior to dialysis of the purified protein EDTA (Sigma) was added to a final concentration of 10mM.

Please delete the paragraph on page 47, lines 16-24, and replace it with the following paragraph:

**PG10**

The methods used for PG10 were essentially the same as for PG3 with the following exceptions. The 5' oligonucleotide primer sequence was CGCGGATATCATGGATAAAGTGAGCTATGC, **(SEQ ID NO: 549)** the 3' oligonucleotide primer sequence was CGCGAGATCTTTTGTTGATACTCAATAATTC **(SEQ ID NO: 550)** and DNA was amplified with the TaqPlus Precision PCR System. The PCR product was digested with

Eco RV and Bgl II and ligated into the expression plasmid pGex-stop RBS(IV) using the Bst Z171 and Bgl II restriction sites and transformed into *E. coli* ER1793.

Please delete the paragraph on page 47, line 26 to page 48, line 7, and replace it with the following paragraph:

**PG11**

The methods used for PG11 were essentially the same as for PG1 with the following exceptions. The 5' oligonucleotide primer sequence was GCGCGTATACATGAGAGCAAACATTTGGCAGATACTTTCCG, **(SEQ ID NO: 551)** the 3' oligonucleotide primer sequence was GCGCAGATCTGCGCAAGCGCAGTATATCGCC **(SEQ ID NO: 552)** and DNA was amplified with Tli DNA polymerase (Promega). The PCR product was cloned into *pCR-Blunt* and transformed into *E. coli* Top10F'before subcloning into the expression plasmid pGex-stop RBS(IV) using the Bst Z171 and Bgl II restriction sites and transformed into *E. coli* ER1793. PG11 was purified by solubilisation of *E. coli* cells with 2% sarkosyl in binding buffer (Qiagen) which was diluted to 0.1% sarkosyl in binding buffer, bound to a Nickel-nitrilotriacetic acid column (Ni-NTA; Qiagen), after washing bound proteins were eluted with 1M imidazole (0.7% CHAPS (Sigma) in elution buffer; Qiagen) according to the Qiagen recommendations. Following purification samples were dialysed against 500mM NaCl, 20mM Tris, 0.7% CHAPS, 20% glycerol (Sigma) at pH7.4 to remove the imidazole, concentrated as required and stored at 4°C until used.

Please delete the paragraph on page 48, lines 9-23, and replace it with the following paragraph:

**PG12**

The methods used for PG12 were essentially the same as for PG1 with the following exceptions. The 5' oligonucleotide primer sequence was GCGCGTATACATGAATAGCAGACATCTGACAATCACAATCATTGCCGG, **(SEQ ID NO: 553)** the 3' oligonucleotide primer sequence was GCGCAGATCTGCTGTTCTGTGAGTGCAGTTGTTTAAGTG **(SEQ ID NO: 554)** and DNA was amplified with Tli DNA polymerase. The PCR product was cloned into pCR-Blunt and transformed into *E. coli* Top10F'cells before subcloning into the expression plasmid pGex-stop RBS(IV) using the Bst Z171 and Bgl II restriction sites and transformed into *E. coli* BL21. Purification of the recombinant protein was essentially the same as PG11 except 0.5% DHPC (1,2-Diheptanoyl-*sn*-glycero-3-phosphocholine; Avanti) in 50mM Tris, 50mM NaCl, pH8.0 was used to solubilise the

inclusion bodies instead of sarkosyl and the DHPC was diluted to 0.1% before addition to the Ni-NTA and 0.1% DHPC was added to all buffers.

Please delete the paragraph on page 48, line 25, to page 49, line 2, and replace it with the following paragraph:

**PG13**

The methods used for PG13 were essentially the same as for PG3 with the following exceptions. The 5' oligonucleotide primer sequence was GCGCCATATGCGGACAAAAACTATCTTTTTTGCG, **(SEQ ID NO: 555)** the 3' oligonucleotide primer sequence was GCGCCTCGAGGTTGTTGAATCGAATCGCTATTTGAGC **(SEQ ID NO: 556)** and DNA was amplified with Tli DNA polymerase. The PCR product was cloned the expression plasmid pET24b using the Nde I and Xho I restriction sites and transformed into *E. coli* BL21. Purification of the recombinant protein was essentially the same as PG3 using 6M urea and 1% NOG (n-octyl glucoside; Sigma) was added to the dialysis buffer. Removal of urea was not proceeded past 2M urea as the protein was insoluble at lower concentrations of urea. Purified protein was stored at 4°C until required.

Please delete the paragraph on page 49, lines 4-13, and replace it with the following paragraph:

**PG14**

The methods used for PG12 were essentially the same as for PG1 with the following exceptions. The 5' oligonucleotide primer sequence was GCGCGGCGCCATGACGGACAACAAACAACGTAATATCG, **(SEQ ID NO: 557)** the 3' oligonucleotide primer sequence was GCGCCTCGAGTTACTTGCGTATGATCACGGACATACCC **(SEQ ID NO: 558)** and DNA was amplified with Tli DNA polymerase. The PCR product was cloned the expression plasmid pProEx-1 using the Ehe I and Xho I restriction sites and transformed into *E. coli* BL21. Purification of the recombinant protein was essentially the same as PG12.

Please delete the paragraph on page 49, lines 15-22, and replace it with the following paragraph:

**PG15**

The methods used for PG15 were essentially the same as for PG3 with the following exceptions. The 5' oligonucleotide primer sequence was CAAAAGTATACTAATAAATATCATTCTCAA, **(SEQ ID NO: 559)** the 3' oligonucleotide primer sequence was GCTTATGGTACCTTTGGTCTTATCTATTAT **(SEQ ID NO: 560)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pGex-stop RBS(IV) using the Bst Z171 and Kpn I restriction sites and transformed into *E. coli* ER1793.

Please delete the paragraph on page 49, lines 24-33, and replace it with the following paragraph:

**PG22**

The methods used for PG22 were essentially the same as for PG1 with the following exceptions. The 5' oligonucleotide primer sequence was CCCCGGATCCGATGCGACTGATCAAGGC, **(SEQ ID NO: 561)** the 3' oligonucleotide primer sequence was CCCCCTCGAGCGGAACGGGGTCATAGCC **(SEQ ID NO: 562)** and DNA was amplified with the TaqPlus Precision PCR System. The PCR product was cloned into the expression plasmid pET24b using the Bam HI and Xho I restriction sites and transformed into *E. coli* BL21DE3. Once PG22 was purified dialysis was performed in the same manner as for PG1 but in the presence of 1M imidazole.

Please delete the paragraph on page 50, lines 1-10, and replace it with the following paragraph:

**PG24**

The methods used for PG24 were essentially the same as for PG3 with the following exceptions. The 5' oligonucleotide primer sequence was CGCGGTATACATGAATTACCTGTACATAC, **(SEQ ID NO: 563)** the 3' oligonucleotide primer sequence was CGCGGGATCCGTTCGATTGGTCGTCGATGG **(SEQ ID NO: 564)** and DNA was amplified with the TaqPlus Precision PCR System. The PCR product was digested with Bst Z171

and Bam HI and ligated into the expression plasmid pGex-stop RBS(IV) using the Bst Z171 and Bgl II restriction sites and transformed into *E. coli* ER1793. Due to the low level of expression of PG24 purification was not proceeded with except on small scale.

Please delete the paragraph on page 50, lines 12-26, and replace it with the following paragraph:

**PG24A**

A modified version of PG24 was also cloned and expressed. PG24A is the same as PG24 with the predicted N-terminal sequence removed. The methods used for PG24A were essentially the same as for PG3 with the following exceptions. The 5' oligonucleotide primer sequence was CGCGCATATGGAGATTGCTTTCCTTTCTTCG, **(SEQ ID NO: 565)** the 3' oligonucleotide primer sequence was CGCGCTCGAGTTAGTTCGATTGGTCGTCG **(SEQ ID NO: 566)** and DNA was amplified with the TaqPlus Precision PCR System. The PCR product was cloned into the expression plasmid pProEx-1 using the Nde I and Xho I restriction sites and transformed into *E. coli* ER1793. Purification of the recombinant protein was essentially the same as PG3 except 8M urea was used to solubilise the inclusion bodies and in the buffers used for the Ni-NTA column purification. Urea was removed by sequential dialysis (4M then 2M, then 1M then 0.5M then 0M urea all in 50mM Tris, 500mM NaCl, 8% glycerol, pH7.4). Purified protein was stored frozen at -80°C until required.

Please delete the paragraph on page 50, line 28 to page 51, line 2, and replace it with the following paragraph:

**PG29**

The methods used for PG29 were essentially the same as for PG3 with the following exceptions. The 5' oligonucleotide primer sequence was GCGCGATATCGCTAGCATGAAAAAGCTATTTCTC, **(SEQ ID NO: 567)** the 3' oligonucleotide primer sequence was GCGCAGATCTCTCGAGTTTGCCATCGGATTGCGGATTG **(SEQ ID NO: 568)** and DNA was amplified with Pfu DNA polymerase being used. The PCR product was cloned into pCR-Blunt (InVitrogen) and transformed into *E. coli* Top10F'before subcloning into the expression plasmid pGex-stop RBS(IV) using the EcoR V and Bgl II restriction sites and transformed into *E. coli* BL21. 6M urea was used throughout the purification process.

Please delete the paragraph on page 51, lines 4-17, and replace it with the following paragraph:

**PG30**

The methods used for PG30 were essentially the same as for PG3 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TACGGAATTCGTGACCCCCGTCAGAAATGTGCGC, **(SEQ ID NO: 569)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCTTTGATCCTCAAGGCTTTGCCCGG **(SEQ ID NO: 570)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates of PG30. 10ml cultures of recombinant *E. coli* were grown to an OD of 2.0 ($A_{600nm}$) in terrific broth and the cells were induced with 0.5mM IPTG and samples taken for analysis at 4 hours post induction. Purification was not done for these studies.

Please delete the paragraph on page 51, lines 19-28, and replace it with the following paragraph:

**PG31**

The methods used for PG31 were essentially the same as for PG30 with the following exceptions. The 5' oligonucleotide primer sequence was CGGGGAATTCGCAAAAATCAATTTCTATGCTGAA, **(SEQ ID NO: 571)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCTGTATGCAATAGGGAAAGCTCCGA **(SEQ ID NO: 572)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E.coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 51, line 30, to page 52, line 5, and replace it with the following paragraph:

**PG32**

The methods used for PG32 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein.

The 5' oligonucleotide primer sequence was CGCAGAATTCCAGGAGAATACTGTACCGGCAACG, **(SEQ ID NO: 573)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCCTTGGAGCGAACGATTACAACAC **(SEQ ID NO: 574)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 52, lines 7-18, and replace it with the following paragraph:

**PG33**

The methods used for PG33 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TGCAGAATTCCAAGAAGCTACTACACAGAACAAA, **(SEQ ID NO: 575)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCTTCCGCTGCAGTCATTACTACAA **(SEQ ID NO: 576)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 52, lines 20-29, and replace it with the following paragraph:

**PG35**

The methods used for PG35 were essentially the same as for PG30 with the following exceptions. The 5' oligonucleotide primer sequence was GCGCGAATTCATGAAACAACTAAACATTATCAGC, **(SEQ ID NO: 577)** the 3' oligonucleotide primer sequence was GCGTGCGGCCGCGAAATTGATCTTTGTACCGACGA **(SEQ ID NO: 578)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 52 line 31, to page 53, line 4, and replace it with the following paragraph:

**PG36**

The methods used for PG36 were essentially the same as for PG30 with the following exceptions. The 5' oligonucleotide primer sequence was AAAGGAATTCTACAAAAAGATTATTGCCGTAGCA, **(SEQ ID NO: 579)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCGAACTCCTGTCCGAGCACAAAGT **(SEQ ID NO: 580)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using theEco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 53, lines 6-15, and replace it with the following paragraph:

**PG37**

The methods used for PG37 were essentially the same as for PG30 with the following exceptions. The 5' oligonucleotide primer sequence was TGGCGAATTCAAACGGTTTTTGATTTTGATCGGC, **(SEQ ID NO: 581)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCCTTGCTAAAGCCCATCTTGCTCAG **(SEQ ID NO: 582)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 53, lines 17-28, and replace it with the following paragraph:

**PG38**

The methods used for PG38 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was CCTCGAATTCCAAAAGGTGGCAGTGGTAAACACT, **(SEQ ID NO: 583)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCCTTGATTCCGAGTTTCGCTTTTAC **(SEQ ID NO: 584)**

and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 53, line 30, to page 54, line 5, and replace it with the following paragraph:

**PG39**

The methods used for PG39 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was AGCTGGATCCCAAGGCGTCAGGGTATCGGGCTAT, **(SEQ ID NO: 585)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCGAATTCGACGAGGAGACGCAGGT **(SEQ ID NO: 586)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Bam HI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 54, lines 7-18, and replace it with the following paragraph:

**PG40**

The methods used for PG40 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCTGAATTCAAGACGGACAACGTCCCGACAGAT, **(SEQ ID NO: 587)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCGAAGTTGACCATAACCTTACCCA **(SEQ ID NO: 588)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 54, lines 20-31, and replace it with the following paragraph:

**PG41**

The methods used for PG41 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GACTGAATTCCAAAACGCCTCCGAAACGACGGTA, **(SEQ ID NO: 589)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCTTGTTCGGGAATCCCCATGCCGTT **(SEQ ID NO: 590)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 54, line 33, to page 55, line 7, and replace it with the following paragraph:

**PG42**

The methods used for PG42 were essentially the same as for PG30 with the following exceptions. The 5' oligonucleotide primer sequence was GTTTGAATTCGCAAATAATACTCTTTTGGCGAAG, **(SEQ ID NO: 591)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTTTGCCGGACATCGAAGAGATCGTC **(SEQ ID NO: 592)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 55, lines 9-18, and replace it with the following paragraph:

**PG43**

The methods used for PG43 were essentially the same as for PG30 with the following exceptions. The 5' oligonucleotide primer sequence was GCGCGAATTCAAAAAAGAAAAACTTTGGATTGCG, **(SEQ ID NO: 593)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCCTTCAAAGCGAAAGAAGCCTTAAC **(SEQ ID NO: 594)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the

expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 55, lines 20-31, and replace it with the following paragraph:

**PG44**

The methods used for PG44 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was AGCCGAATTCTGTAAGAAAAATGCTGACACTACC, **(SEQ ID NO: 595)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCCTTTTTCCCGGGCTTGATCCCGAT **(SEQ ID NO: 596)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 55, line 33, to page 56, line 8, and replace it with the following paragraph:

**PG45**

The methods used for PG45 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GACAGGATCCTGCTCCACCACAAAGAATCTGCCG, **(SEQ ID NO: 597)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCGAAGGGATAGCCGACAGCCAAAT **(SEQ ID NO: 598)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Bam HI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 56, lines 10-21, and replace it with the following paragraph:

**PG46**

The methods used for PG46 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was CTCGGAATTCCGTTATGTGCCGGACGGTAGCAGA, **(SEQ ID NO: 599)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCGAACGGATAGCCTACTGCAATGT **(SEQ ID NO: 600)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 56, lines 23-35, and replace it with the following paragraph:

**PG47**

The methods used for PG47 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was CGCCGAATTCCAAACAGTGGTGACCGGTAAGGTGATCGATTCAGAA, **(SEQ ID NO: 601)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCGAAGTTTACACGAATACCGGTAGACCAAGTGCGGCC **(SEQ ID NO: 602)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 57, lines 1-12, and replace it with the following paragraph:

**PG48**

The methods used for PG48 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein.

The 5' oligonucleotide primer sequence was TGCTGAATTCCAAAAATCCAAGCAGGTACAGCGA, **(SEQ ID NO: 603)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCTCGTAACCATAGTCTTGGGTTTTG **(SEQ ID NO: 604)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 57, lines 14-25, and replace it with the following paragraph:

**PG49**

The methods used for PG49 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GAACGGATCCAACGAGCCGGTGGAAGACAGATCC, **(SEQ ID NO: 605)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTAATCTCGACTTCATACTTGTACCA **(SEQ ID NO: 606)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Bam HI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 57, line 27, to page 58, line 2, and replace it with the following paragraph:

**PG50**

The methods used for PG50 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GCTGGGATCCGCGACAGACACTGAGTTCAAGTAC, **(SEQ ID NO: 607)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCGAACTTCACTACCAAGCCCATGT **(SEQ ID NO: 608)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Bam HI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 58, lines 4-15, and replace it with the following paragraph:

**PG51**

The methods used for PG51 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TCTTGAATTCGCGCAAAGTCTTTTCAGCACCGAA, **(SEQ ID NO: 609)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCACTTTTTCGTGGGATCACTCTCTT **(SEQ ID NO: 610)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 58, lines 17-26, and replace it with the following paragraph:

**PG52**

The methods used for PG52 were essentially the same as for PG30 with the following exceptions. The 5' oligonucleotide primer sequence was AGAAGAATTCAAACGGACAATCCTCCTGACGGCA, **(SEQ ID NO: 611)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCGAAGTCTTTGCCCTGATAGAAATC **(SEQ ID NO: 612)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 58, line 28 to page 59, line 3, and replace it with the following paragraph:

**PG53**

The methods used for PG53 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCTGAATTCGCGAATCCCCTTACGGGCCAATCG, **(SEQ ID NO: 613)** the 3' oligonucleotide

primer sequence was CTATGCGGCCGCGTCCGAAAGGCAGCCGTAATAGG **(SEQ ID NO: 614)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 59, lines 5-16, and replace it with the following paragraph:

**PG54**

The methods used for PG54 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was CGCTGAATTCCAGATTTCGTTCGGAGGGGAACCC, **(SEQ ID NO: 615)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCCTGCTTCACGATCTTTTGGCTCA **(SEQ ID NO: 616)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 59, lines 18-29, and replace it with the following paragraph:

**PG55**

The methods used for PG55 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was CGAGGGATCCGAGCTCTCTATTTGCGATGGCGAG, **(SEQ ID NO: 617)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTCTTACCTGACTTCTTGTCACGAAT **(SEQ ID NO: 618)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Bam HI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 59, line 31, to page 60, line 4 and replace it with the following paragraph:

**PG56**

The methods used for PG56 were essentially the same as for PG30 with the following exceptions. The 5' oligonucleotide primer sequence was AAATGGATCCCGAAAAATTTTGAGCTTTTTGATG, **(SEQ ID NO: 619)** the 3' oligonucleotide primer sequence was CTATGCGGCCGCTTTGATTCGTAATTTTTCCGTATC **(SEQ ID NO: 620)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Bam HI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 60, lines 6-17, and replace it with the following paragraph:

**PG57**

The methods used for PG57 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TGCTGGATCCCAAGAGATCTCAGGCATGAATGCA, **(SEQ ID NO: 621)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTCGGCCTCTTTATCTCTACCTTTTC **(SEQ ID NO: 622)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Bam HI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 60, lines 19-30, and replace it with the following paragraph:

**PG58**

The methods used for PG58 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was CGGTGAATTCCAAACCCCACGAAATACAGAAACC, **(SEQ ID NO: 623)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGAAAGTCCAGCTAAAACCGGCGAA **(SEQ ID NO: 624)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the

expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 60, line 32, to page 61, line 7 and replace it with the following paragraph:

**PG59**

The methods used for PG59 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TGCTGAATTCCAACAAGAGAAGCAGGTGTTTCAT, **(SEQ ID NO: 625)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGAAGATGCTCTTATCGTCCAAACG **(SEQ ID NO: 626)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 61, lines 9-20 and replace it with the following paragraph:

**PG60**

The methods used for PG60 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCGGAATTCCAGATGCTCAATACTCCTTTCGAG, **(SEQ ID NO: 627)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGAAGAGGTAGGAGATATTGCAGAT **(SEQ ID NO: 628)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 61, lines 22-33 and replace it with the following paragraph:

**PG61**

The methods used for PG61 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was AGCAGAATTCCCCGTCTCCAACAGCGAGATAGAT, **(SEQ ID NO: 629)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGAAATCGATTGTCAGACTACCCAG **(SEQ ID NO: 630)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 62, lines 1-12, and replace it with the following paragraph:

**PG62**

The methods used for PG62 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TGCTGAATTCCAGCGGTTTCCGATGGTGCAGGGA, **(SEQ ID NO: 631)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGAAGTGAAATCCGACACGCAGCTG **(SEQ ID NO: 632)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 62, lines 14-25, and replace it with the following paragraph:

**PG63**

The methods used for PG63 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was

GGCAGAATTCCAAGAAGCAAACACTGCATCTGAC, **(SEQ ID NO: 633)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGAAAGTGTACGCAACACCCACGCC **(SEQ ID NO: 634)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 62, line 27, to page 63, line 2, and replace it with the following paragraph:

**PG64**

The methods used for PG64 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TGCTGAATTCCAGAGTCGTCCTGCTCTTAGACTG, **(SEQ ID NO: 635)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGAAGCGAACACCGAGACCCACAAA **(SEQ ID NO: 636)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 63, lines 4-15, and replace it with the following paragraph:

**PG65**

The methods used for PG65 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCCGGATCCATCGGACAAAGCCGCCCGGCACTT, **(SEQ ID NO: 637)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTAAAGCGGTAACCTATGCCCACGAA **(SEQ ID NO: 638)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Bam HI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 63, lines 17-28, and replace it with the following paragraph:

**PG66**

The methods used for PG66 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GTTTGAATTCCAAGACGTTATCAGACCATGGTCA, **(SEQ ID NO: 639)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTAAAATGAGTGGAGAGCGTGGCCAT **(SEQ ID NO: 640)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 63, line 30, to page 64, line 5, and replace it with the following paragraph:

**PG67**

The methods used for PG67 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GAACGAGCTCGCGGAACGTCCTATGGCCGGAGCA, **(SEQ ID NO: 641)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTATACCAAGTATTCGTGATGGGACG **(SEQ ID NO: 642)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Sac I and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 64, lines 7-18, and replace it with the following paragraph:

**PG68**

The methods used for PG68 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GCTTGCGGCCGCCCTTATGAAAGATTTGCAGAT, **(SEQ ID NO: 643)** the 3' oligonucleotide primer sequence was

GGTGCTCGAGTATACTCAACAAGCACCTTATGCAC **(SEQ ID NO: 644)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Not I and Xho I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 64, lines 20-31, and replace it with the following paragraph:

**PG69**

The methods used for PG69 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TGCTGAATTCCAGGAAGGGGAGGGGAGTGCCCGA, **(SEQ ID NO: 645)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGAAGCTGTAGCGGGCTTTGAACCA **(SEQ ID NO: 646)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 64, line 33, to page 65, line 8, and replace it with the following paragraph:

**PG70**

The methods used for PG70 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was CGGTGGATCCTCGCAAATGCTCTTCTCAGAGAAT, **(SEQ ID NO: 647)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTAAACGAAATATCGATACCAACATC **(SEQ ID NO: 648)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Bam HI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 65, lines 10-21, and replace it with the following paragraph:

**PG71**

The methods used for PG71 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TGCTGAATTCCAGAACAATACCCTCGATGTACAC, **(SEQ ID NO: 649)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTATTGCCGGTAGGATTTCCTTGTCC **(SEQ ID NO: 650)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 65, lines 23-34, and replace it with the following paragraph:

**PG72**

The methods used for PG72 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TGCTGAATTCGGAGAGCGACTGGAGACGGACAGC, **(SEQ ID NO: 651)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTATGATTGCCTTTCAGAAAAGCTAT **(SEQ ID NO: 652)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed TGCTGAATTCGGAGAGCGACTGGAGACGGACAGC **(SEQ ID NO: 653)** into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 66, lines 1-12, and replace it with the following paragraph:

**PG73**

The methods used for PG73 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was

CGGTGAATTCCAACAGACAGGACCGGCCGAACGC, **(SEQ ID NO: 654)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTTAAGAAAGGTATCTGATAGATCAG **(SEQ ID NO: 655)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 66, lines 14-25, and replace it with the following paragraph:

**PG74**

The methods used for PG74 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TGCTGAATTCCAAGAAAATAATACAGAAAAGTCA, **(SEQ ID NO: 656)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGAGGTTTAATCCTATGCCAATACT **(SEQ ID NO: 657)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 66, line 27, to page 67, line 2, and replace it with the following paragraph:

**PG75**

The methods used for PG75 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCGGGATCCGCTCAGGAGCAACTGAATGTGGTA, **(SEQ ID NO: 658)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGTGGAACAAATTGCGCAATCCATC **(SEQ ID NO: 659)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Bam HI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 67, lines 4-15, and replace it with the following paragraph:

**PG76**

The methods used for PG76 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was AGCAGAATTCGGAAACGCACAGAGCTTTTGGGAA, **(SEQ ID NO: 660)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTTACCTGCACCTTATGACTGAATAC **(SEQ ID NO: 661)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 67, lines 17-28, and replace it with the following paragraph:

**PG77**

The methods used for PG77 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TGCTGAATTCCAAGAGAAAAAGGATAGTCTCTCT, **(SEQ ID NO: 662)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTCTTCTTATCGCCATAGAATACAGG **(SEQ ID NO: 663)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 67, line 30, to page 68, line 5, and replace it with the following paragraph:

**PG78**

The methods used for PG78 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCAGAATTCCAGGATTCTTCCCACGGTAGCAAT, **(SEQ ID NO: 664)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTATCATGATAGTAAAGACTGGTTCT **(SEQ ID NO:**

665) and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 68, lines 7-17, and replace it with the following paragraph:

**PG79**

The methods used for PG79 were essentially the same as for PG30 with the following exceptions. The 5' oligonucleotide primer sequence was TGCTGAATTCGTAGTGACGCTGCTCGTAATTGTC, (SEQ ID NO: 666) the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGCCGTCCTGCCTTTCTGCCTGACG (SEQ ID NO: 667) and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 68, lines 19-30, and replace it with the following paragraph:

**PG80**

The methods used for PG80 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCCGAATTCCAAAACGTGCAGTTGCACTACGAT, (SEQ ID NO: 668) the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGTTGAAAGTCCATTTGACCGCAAG (SEQ ID NO: 669) and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 68, line 32, to page 69, line 7, and replace it with the following paragraph:

**PG81**

The methods used for PG81 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GTTTGAATTCCAGGATTTTCTCTATGAAATAGGA, **(SEQ ID NO: 670)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTTTGTTTATTACAAAAAGTCTTACG **(SEQ ID NO: 671)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 69, lines 9-20, and replace it with the following paragraph:

**PG82**

The methods used for PG82 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GAACGAATTCCAGAACAACAACTTTACCGAGTCG, **(SEQ ID NO: 672)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGTTCAGTTTCAGCTTTTTAAACCA **(SEQ ID NO: 673)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 69, lines 22-33, and replace it with the following paragraph:

**PG84**

The methods used for PG84 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TGCTGGATCCCAGAATGATGACATCTTCGAAGAT, **(SEQ ID NO: 674)** the 3' oligonucleotide

primer sequence was GAGTGCGGCCGCTATTGCGTCCCCGGCCACTACGTCC **(SEQ ID NO: 675)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Bam HI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 70, lines 1-12, and replace it with the following paragraph:

**PG85**

The methods used for PG85 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was CGGTGAATTCGTACCAACGGACAGCACGGAATCG, **(SEQ ID NO: 676)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTCAGATTGGTGCTATAAGAAAGGTA **(SEQ ID NO: 677)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 70, lines 14-25, and replace it with the following paragraph:

**PG86**

The methods used for PG86 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TGCTGGATCCCAAACGCATGATCATCTCATCGAA, **(SEQ ID NO: 678)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGTGGTTCAGGCCGTGGGCAAATCT **(SEQ ID NO: 679)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Bam HI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 70, line 27, to page 71, line 2, and replace it with the following paragraph:

**PG87**

The methods used for PG87 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCGGAATTCCAGAGCTATGTGGACTACGTCGAT, **(SEQ ID NO: 680)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTATTACTGTGATTAGCGCGACGCTG **(SEQ ID NO: 681)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 71, lines 4-15, and replace it with the following paragraph:

**PG88**

The methods used for PG88 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was AGCAGAATTCGCCGAATCGAAGTCTGTCTCTTTC, **(SEQ ID NO: 682)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTCGGCAAGTAACGCTTTAGTGGGGA **(SEQ ID NO: 683)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 71, lines 17-28, and replace it with the following paragraph:

**PG89**

The methods used for PG89 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was

TGCTGAATTCCAATCGAAGTTAAAGATCAAGAGC, **(SEQ ID NO: 684)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTATTAGTCCAAAGACCCACGGTAAA **(SEQ ID NO: 685)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 71, line 30, to page 72, line 5, and replace it with the following paragraph:

**PG90**

The methods used for PG90 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCAGAATTCCAAACAACGACGAACAGTAGCCGG, **(SEQ ID NO: 686)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTTTTTTGTTGTGATACTGTTTGGGC **(SEQ ID NO: 687)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 72, lines 7-18, and replace it with the following paragraph:

**PG91**

The methods used for PG91 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TGCTGAATTCCAGACGATGGGAGGAGATGATGTC, **(SEQ ID NO: 688)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTTTCCACGATGAGCTTCTCTACGAA **(SEQ ID NO: 689)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 72, lines 20-31, and replace it with the following paragraph:

**PG92**

The methods used for PG92 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCCGAATTCGCCGATGCACAAAGCTCTGTCTCT, **(SEQ ID NO: 690)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTTCGAGGACGATTGCTTAGTTCGTA **(SEQ ID NO: 691)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 72, line 33, to page 73, line 8, and replace it with the following paragraph:

**PG93**

The methods used for PG93 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCCGAGCTCCAAGAGGAAGGTATTTGGAATACC, **(SEQ ID NO: 692)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGCGAATCACTGCGAAGCGAATTAG **(SEQ ID NO: 693)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Sac I and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 73, lines 10-21, and replace it with the following paragraph:

**PG94**

The methods used for PG94 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCCGAGCTCCAAGAGGAAGGTATTTGGAATACC, **(SEQ ID NO: 694)** the 3' oligonucleotide

primer sequence was GAGTGCGGCCGCTTTGTCCTACCACGATCATTTTCTT **(SEQ ID NO: 695)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 73, lines 23-34, and replace it with the following paragraph:

**PG95**

The methods used for PG95 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCCGAGCTCTGTGGAAAAAAAGAAAAACACTCT, **(SEQ ID NO: 696)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTAACTGTCTCCTTGTCGCTCCCCGG **(SEQ ID NO: 697)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Sac I and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 74, lines 1-12, and replace it with the following paragraph:

**PG96**

The methods used for PG96 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was TGCTGAGCTCCAAACGCAAATGCAAGCAGACCGA, **(SEQ ID NO: 698)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTTTTGAGAATTTTCATTGTCTCACG **(SEQ ID NO: 699)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Sac I and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 74, lines 14-25, and replace it with the following paragraph:

**PG97**

The methods used for PG97 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCGGGATCCCAGTTTGTTCCGGCTCCCACCACA, **(SEQ ID NO: 700)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTCTGTTTGATGAGCTTAGTGGTATA **(SEQ ID NO: 701)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Bam HI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 74, line 27, to page 75, line 2, and replace it with the following paragraph:

**PG98**

The methods used for PG98 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was AGCAGAATTCCAAGAAAGAGTCGATGAAAAAGTA, **(SEQ ID NO: 702)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTTAGCTGTGTAACATTAAGTTTTTTATTGAT **(SEQ ID NO: 703)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 75, lines 4-15, and replace it with the following paragraph:

**PG99**

The methods used for PG99 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was

TGCTGAATTCAAGGACAATTCTTCTTACAAACCT, **(SEQ ID NO: 704)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTTCGAATCACGACTTTTCTCACAAA **(SEQ ID NO: 705)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 75, lines 17-28, and replace it with the following paragraph:

**PG100**

The methods used for PG100 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCAGAATTCCAGTCTTTGAGCACAATCAAAGTA, **(SEQ ID NO: 706)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTGATAGCCAGCTTGATGCTCTTAGC **(SEQ ID NO: 707)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 75, line 30, to page 76, line 4, and replace it with the following paragraph:

**PG101**

The methods used for PG101 were essentially the same as for PG30 with the following exceptions. The 5' oligonucleotide primer sequence was TGCTGAATTCAAAGGCAAGGGCGATCTGGTCGGG, **(SEQ ID NO: 708)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTTCTCTTCTCGAACTTGGCCGAGTA **(SEQ ID NO: 709)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 76, lines 6-17, and replace it with the following paragraph:

**PG102**

The methods used for PG102 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GGCCGAATTCCAGATGGATATTGGTGGAGACGAT, **(SEQ ID NO: 710)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTCTCTACAATGATTTTTTCCACGAA **(SEQ ID NO: 711)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Eco RI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 76, lines 19-30, and replace it with the following paragraph:

**PG104**

The methods used for PG104 were essentially the same as for PG30 with the following exceptions. The predicted N-terminal signal sequence was removed from the recombinant protein. The 5' oligonucleotide primer sequence was GAACGGATCCAACGTGTCTGCTCAGTCACCCCGA, **(SEQ ID NO: 712)** the 3' oligonucleotide primer sequence was GAGTGCGGCCGCTTCTGAGCGATACTTTTGCACGTAT **(SEQ ID NO: 713)** and DNA was amplified with the Tth XL PCR kit. The PCR product was cloned into the expression plasmid pET24a using the Bam HI and Not I restriction sites and transformed into *E. coli* BL21DE3. Expression studies and immunoreactivity studies were carried out on whole *E. coli* lysates. Purification was not done for these studies.

Please delete the paragraph on page 80, line 33, to page 81, line 15, and replace it with the following paragraph:

RT-PCR results are shown in Table 6 using the oligonucleotide primers as used in "Cloning, expression and purification of recombinant *P. gingivalis* genes" section described above,except for the following changes. For PG1 the 3' reverse primer used was GCGCCTCGAGATTCATTTCCTTATAGAG, **(SEQ ID NO: 714)** for PG4 the 5' forward primer was CTTCTTGTCGACTACAGCGGACATCATAAAATC **(SEQ ID NO: 715)** and the 3' reverse primer was TTCCACCTCGAGTTAACGCAACTCTTCTTCGAT, **(SEQ ID NO: 716)** for PG6 the 5' forward primer was TAAAGAATTCTGCCTCGAACCCATAATTGCTCCG, **(SEQ ID NO: 717)** for PG10 the 5' forward primer was CGCGCATATGGATAAAGTGAGCTATGC **(SEQ ID NO: 718)** and the 3' reverse primer was CGCGCTCGAGTTTGTTGATACTCAATAATTC, **(SEQ ID NO: 719)** for PG13 the 5' forward primer was GCCCGGCGCCATGCGGACAAAAACTATCTTTTTTGCG **(SEQ ID NO: 720)** and the 3' reverse primer was GCCCGGCGCCTTAGTTGTTGAATCGAATCGCTATTTGAGC **(SEQ ID NO: 721)** . Amplification of *P. gingivalis* transcripts is a likely indication that RNA for a specific candidate is present and that the protein is produced. However, where there is no amplification achieved this does not indicate that this gene is never transcribed and may be the result of the culture conditions or the state of the cells when harvested.